A mixed models approach (SAS PROC MIXED) with fixed and random effects is used for analysis as follows:

Model: mixed models analysis

$$y_{ijk} = \mu + site_{(0,1)} + time_j + participant_i + tech_k + e_{ijk}$$

i = participant

j = main or repeat

k = technician

Site: 0=Memphis, 1=Pittsburgh

fixed effects: site, time

random effects: participant, technician

This model makes the following distributional assumptions:

outcome variables are normally distributed $e_{ijk} \sim N(0, \sigma^2_e)$

random effects are normally distributed

$technician_k \sim N(0, \sigma^2_t)$

$participant_i \sim N(0, \sigma^2_p)$

From this model, a coefficient of variation between technicians can be estimated, the possibility that a single examiner differs from all other examiners can be tested, and the relative contribution of technician and participant variation to the overall variation can be calculated.